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<p>(54) Title: A TWO-PIECE DISPENSER CAP WITH SECURITY DEVICE</p> <p>(57) Abstract</p> <p>In a two-part dispenser cap (1) with a security device, a first part (4) is solidly connected to a neck (3) of a container (2) and a second part (6) is screwed to the first part (4). The second part (6) can selectively assume a lowered closed position, in which it exhibits a mouth (7) which is closed by a wall (8) of the first part (4), preventing exit of a product contained in the container (2), and a raised open position in which the mouth (7) is distanced from the wall (8), permitting product to flow out of the container (2). An annular body (11) is connected to the first part (4) by means of first easy-break ribs (10) destined to break on insertion of the dispenser cap (1). A security strip (9) is connected to the annular body (11) by means of second easy-break ribs (13) destined to break on first opening of the container (2).</p>			

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Description.A Two-Piece Dispenser Cap with Security Device.Technical Field.

The invention relates to a two-piece dispenser cap with security device.

The prior art comprises dispenser hoods generally used, for example, in shampoo or liquid detergent containers, 05 where it is sufficient to rotate or slightly lift the dispenser hood, without removing it from the container; the hoods are so made that thanks to this slight lifting a passage mouth is opened, through which the product can flow. These containers are repeatedly opened and closed 10 without ever removing the hood or cap, so that a small dose of product can be dispensed on each occasion.

Background Art.

Known-type dispenser hoods, though having the practical advantage of immediacy in the opening and closing procedures, are unable to provide a guarantee that the 15 container has not been tampered with prior to first opening thereof.

The prior art further teaches security capsules for bottles, constituted by two elements in which: a first, cylindrical element constitutes the cap of the bottle; a 20 second element comprises a first ring, which is blocked in the first cylindrical element, a second ring, which is coaxially connected to the first ring by means of easy-break ribs and which constitutes the security strip of the capsule, and an additional element, coaxially connected to 25 one of the two above-mentioned rings by means of easy-break ribs, so that it can easily be detached on inserting the capsule on the bottle.

The additional element can have, for example, the shape of a gasket plate between the bottle neck and the cap, or a dispenser, or a drop-counter, or the like. A capsule of the above-mentioned type is taught in patent GB 2 141 414.

05 The capsule, which offers the considerable advantage of exhibiting relatively low stocking and production costs, is all the same rather impractical to use, especially when the additional element is shaped and used as a dispenser, for the liquid can exit only when the first element or cap

10 has been fully removed from the bottle; the capsule in fact, cannot operate in the above-mentioned typical way of rapid-opening dispenser hoods.

A principal aim of the present invention is to obviate the above-mentioned limits and drawbacks in the prior art by

15 providing a two-piece assemblable dispenser cap having a security device, being relatively economical to produce, store and assemble and able to be opened and closed very rapidly and practically.

An advantage of the dispenser cap is that it guarantees

20 maintenance of good vacuum conditions in the container it is applied to.

A further advantage is that it is applicable to already-existing container types.

Disclosure of the Invention.

The above aims and advantages are all attained by a

25 dispenser cap as it is characterised in the appended claims.

Further characteristics and advantages of the present invention will better emerge from the detailed description that follows, of an embodiment of the invention,

30 illustrated in the form of a non-limiting example in the accompanying drawings, in which:

figure 1 is a vertical elevation in longitudinal section divided into two parts of the cap of the invention applied

to a container, in which in the left part the container is closed by the cap in an unopened configuration, while in the right part the container is open with the security strip having been separated from the rest of the cap.

05 With reference to the figure of the drawing, 1 denotes in its entirety a dispenser cap in two pieces and including a security device, destined to be applied on a neck 3 of a container 2.

10 The dispenser cap 1 comprises a first part 4 applied solidly by jointing on the neck 3 of the container 2 such as to close the mouth. The dispenser cap 1 also comprises at least one central and annular orifice 5 through which a product contained in the container 2 can pass. An annular projection 14 on the first part 4 engages with an undercut 15 on the neck 3 of the container 2 so as to prevent the first part 4 from rising with respect to the container 2 after assembly.

15 A plurality of longitudinal teeth 16 set on the first part 4 and arranged in an annular crown fashion engage in corresponding channels 17 afforded on the neck 3 of the container 2 with the aim of preventing the first part 4 from rotating with respect to the container 2 after assembly.

20 An annular lip 18, projecting from the first part 4 and made in a single element with the first part 4, contactingly and sealingly interacts with the internal wall of the neck 3 in proximity of the upper mouth of the container 2.

25 A cylindrical body 19 made in a single piece with the first part 4 projects coaxially upwardly. Also made in a single piece with the first part 4 and rising centrally therefrom is a central element 20 having a superiorly-closed hollow body shape, coaxial to and having a smaller diameter than the cylindrical body 19, so that an annular channel is afforded between the cylindrical body 19 and

the central element 20, opening inferiorly in the orifice 5 and superiorly at a height which is lower than the upper end of the central element 20.

05 The dispenser cap 1 comprises a second part 6, coupled to the first and can rise or lower with respect thereto. Preferably the two pieces 4 and 6 are coupled together by means of a screw 22 connection.

10 The second part 6 superiorly exhibits a central mouth 7 for passage of the product contained in the container 2 and in communication with the orifice 5 of the first part 4. The second part 6 further exhibits a tubular body 23, coaxial with the central mouth 7 and projecting downwards, which tubular body 23 is made in a single piece with the second part 6 and has a greater superior internal diameter 15 than the central element 20 of the first part 4. The internal surface of the tubular body 23 interacts contactingly with the external surface of the cylindrical body 19, both said surfaces being able to drag sealedly one on the other. A free annular space remains between a 20 part of the tubular body 23 and the central element 8, which space represents a sort of continuation of the conduit 21 and which reaches upward as far as the central mouth 7.

25 The second part 6 can during use selectively assume a first lowered closed position, illustrated in the left part of the figure, and a second raised open position, illustrated in the right part of the figure.

30 In the closed position the wall of the edge of the central mouth 7 of the second part 6 is settled contactingly on a wall 8 of the first part 4, which wall 8 is constituted by the upper portion of the central element 20 and which is shaped and arranged in such a way as to obstruct the central mouth 7, so that product cannot exit from the container 2.

35 In the raised position the central mouth 7 of the second

part 6 is distanced from the first part 4, so that the product can exit from the container 2; more precisely, the product can pass through the orifice 5, cross the conduit 21 and exit from the central mouth 7. The sealedly 05 dragging contact between bodies 19 and 23 in the figure prevents undesired loss of product.

An annular body 11 inserted into a niche 12 afforded in the second part 6 is connected to the inferior end of the first part 4 by means of easy-break ribs 10, arranged 10 coaxially and in a crown-ring fashion and destined to break on insertion of the dispenser cap 1 on the container 2 due to an axial-direction lowering of the second part 6 with respect to the first part 4.

On an internal surface thereof and projecting internalwise 15 in proximity of the upper end of the niche 12, the second part 6 exhibits an annular relief 26. This annular relief 26 exhibits an internal diameter which is slightly smaller than the maximum diameter of the crown formed by the easy-break ribs 10, and cooperates contactingly there-with in 20 such a way as to break them when the second part 6 is first mounted on the first part 4. In the figure the easy-break ribs 10 have already been broken.

A security strip 9 is connected to the support elements 11 by means of easy-break ribs 13 destined to break on first 25 opening of the container 2 due to an axial-direction raising of the second part 6. The security strip 9 exhibits a projection 24 which when the dispenser cap 1 is mounted engages in an undercut 25 of the neck 3 of the container 2. The interaction between the projection 24 and 30 the undercut 25 causes the easy-break ribs 13 to break and the security strip 9 to detach on first rotation of the second part 6.

The second part 6 exhibits, on an internal wall thereof, a plurality of elastically-flexible strips 28 arranged 35 circumferentially and cooperating with corresponding

projections 27 arranged on the first part 4 in such a way as to create a sort of "noisy engagement" on each opening or closing of the dispenser cap 1.

05 The dispenser cap 1 is made separately in two pieces 4 and 6, while the first part 4 is made in one piece with the annular body 11 and the security strip 9. Preferably the two parts of the cap 1 (that is, an external part constituted by the second part 6 and an internal part, constituted by the first part 4, the annular body 11 and the security strip 9) are obtained by pressing of plastic materials.

10 Subsequently the two parts are assembled together during the mounting operation on to the neck 3 of the container 2.

15 Initially the dispenser cap 1 is formed by inserting the internal part in the external part in such a way that the annular body 11 joints in the corresponding annular niche 12 of the second part 6; subsequently the neck 3 of the container 2 is inserted into the dispenser cap 1.

20 During the assembly and mounting phase the easy-break ribs 10, which at first hold the first part 4 and the annular body 11 together, break due to the impact with the annular relief 26 of the second part 6.

25 Once the dispenser cap 1 has been associated to the neck 3 of the container 2, the security strip 9 guarantees the security of the container 2.

30 The dispenser cap 1 also simplifies the opening and closing of the container 2 without any part of the dispenser cap 1 being removed. To open it is sufficient to unscrew the second part 6 by enough to release the central mouth 7 from the wall 8; to re-close, the second part 6 is re-screwed until the central mouth 7 comes up once more against the wall 8.

35 The "noisy engaging" between the flexible elements is to signal to the user that the closing operation has been

completed and that the container 2 is properly closed, so that the product does not leak accidentally, say, in a travelling bag.

05 The mounting operation of the dispenser cap 1 on the neck 3 is no more complicated than, for example, known operations for prior-art dispensing caps lacking a security device.

Claims.

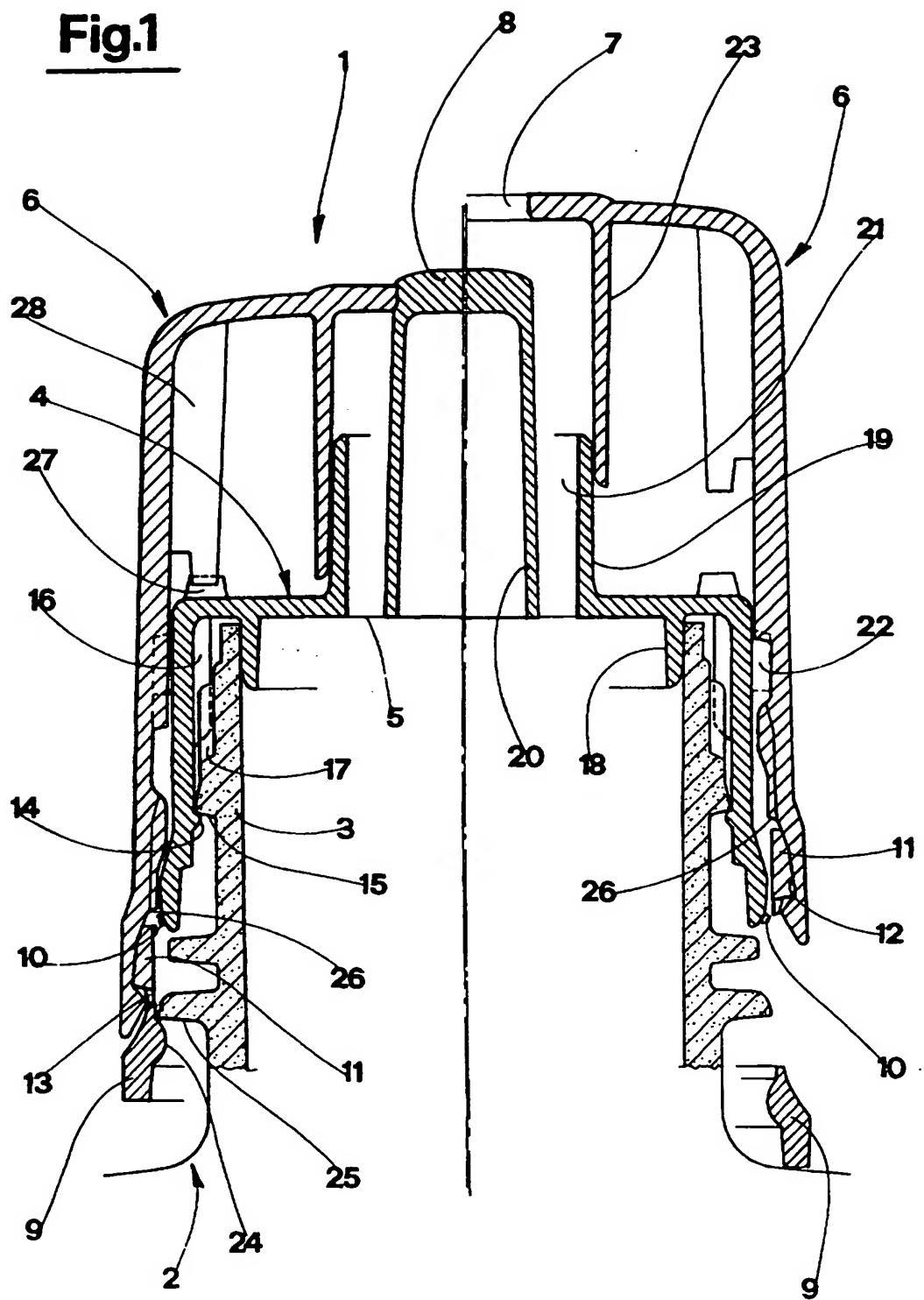
1. A two-part dispenser cap (1) with a security device, destined for use on a container (2) provided with a neck (3), comprising:
 - 05 a first part (4), applied solidly on the neck (3) of the container (2) in such a way as to close a mouth thereof and exhibiting at least one orifice (5) for passage of a product contained in the container (2);
 - 10 a second part (6), coupled to the first part (4) in such a way that said second part (6) can be raised and lowered with respect to said first part (4), exhibiting a mouth (7) for passage of the product, which mouth (7) is in communication with said orifice (5); said second part (6) being able to assume during use a first lowered closed position, in which it rests contactingly against a wall 15 (8) of the first part (4), said wall (8) being conformed and arranged such as to block said mouth (7), so that exiting of said product is prevented, and a second raised open position in which the mouth (7) of the second part (6) is distanced from said wall (8) of the first part (4), so that said product can exit from the container (2);
 - 20 an annular body (11) being joint-inserted in a niche (12) afforded on the second part (6) and being connected to the first part (4) by means of first easy-break ribs (10) destined to break on first insertion of the dispenser cap 25 (1) on the container (2) due to the effect of an axial-direction lowering of the second part (6) with respect to the first part (4);
 - 30 a security strip (9), connected to the annular body (11) by means of second easy-break ribs (13) destined to break on first opening of the container (2) by effect of an axial-direction raising of the second part (6).

2. A two-part dispenser cap as in claim 1, wherein the

second part (6) exhibits an inwardly-projecting annular relief (26), situated in proximity of an upper end of said niche (12) and contactingly interacting with said first easy-break ribs (10) in such a way as to break said first easy-break ribs (10) due to an axial-direction lowering of the second part (6) with respect to the first part (4).

05 3. A two-part dispenser cap as in claim 1, wherein the second part (6) exhibits a plurality of elastically flexible strips (28) which cooperate with projections (27) situated on the first part (4) in such a way as to cause on each opening or closing of the container, at least one perceptible clicking noise of said strips (28).

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Fig.1

INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER
IPC 6 B65D47/24 B65D41/34

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 6 B65D

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 805 807 A (PERNE RAYMOND ET AL) 21 February 1989 see claims; figures -----	1,3
A	GB 2 141 414 A (BORMIOLI METALPLAST SPA) 19 December 1984 cited in the application see page 1, line 90 - line 98 see page 2, line 64 - line 68; figures -----	1,2
P,A	EP 0 709 301 A (MEYER UWE F ;SANDER DIETER (CA)) 1 May 1996 see abstract; figures -----	

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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Information on patent family members

Int'l Application No
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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 4805807 A	21-02-89	FR 2600978 A	08-01-88
GB 2141414 A	19-12-84	DE 8416600 U	09-08-84
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